

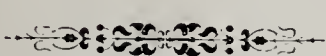
DETAILS

OF THE

WEIGHTS AND MEASURES



BY

The Bureau of Commerce and Industry,
Department of Agriculture and
Commerce, Japan.



PRINTED BY M. ŌNUKI, TOKYO.

1893.



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DETAILS

OF THE

WEIGHTS AND MEASURES.



IMPLEMENTS USED FOR THE INSPECTION OF WEIGHTS AND MEASURES.

(Department L. Group 151. Class 865.)



The Implements used for the Inspection of Weights and Measures is applied to determine the measuring Apparatus of Capacity and Weight in conformity with the Weights and Measures Law put into force from January 1, 1893.

MEASURING APPARATUS OF LENGTH FOR THE USE OF INSPECTION.

No. I.

First Straight Measure.

Applicable to the Inspection of Straight Measures, Crooked Measures, and Fold Measures of Japanese System.

Material.....Brass.

GRADUATING.—The entire length is 3 shaku, two shaku of which is graduated on each 1 bu space, and the remaining one shaku, on each 5 rin space, and it is on the extremity of the latter that on both sides of 4 rin, 5 mō graduations are added to show the common difference.

No. II.

Second Straight Measure.

Used for the inspection of Metrical Straight Measures, Crooked Measures, and Fold Measures.

Material.....Brass.

GRADUATION.—The entire length is 1 meter graduated on each 1 millimeter space, and on one extremity, $\frac{1}{10}$ millimeter graduations are added on both sides of the space of one millimeter to show clearly the common difference.

No. III.

Third Kujira Shaku.

Is a scale used for measuring the length of Cloths, and 1 shaku it meets to the 1 shaku 2 Sun and 5 Bu of Common Measures, and is used for the inspection of Kujira Shaku.

Material.....Brass.

GRADUATION.—The whole length is 2 shaku of Kujira Shaku with a graduation on each 1 Bu space of Kujira Shaku, and on one extremity of it is graduated 2 rin degrees of Kujira Shaku for the reference of the common difference.

No. IV.

First Tape.

Is used for the inspection of Tapes and Chain Measures of Japanese System.

Material.....Steel.

GRADUATION —The whole length measures 18 shaku, and 12 shaku of one of its extremities is graduated on each space of 1 Sun, while 6 Shaku of another extremity, on each space of 1 Bu, with 2 Rin degrees added on both sides of 4 Bu for the reference of common difference.

No. V.

Second Tape.

Used for the inspection of Tapes and Chain Measures of Metrical System.

Material.....Brass.

GRADUATION.—The whole length is 5 meters, and on one extremity of it, the space of 3 meters are graduated on each 5 centimeters, the following 1 meters, on each 5 millimeter, and the space of 1 meter following above, on each 1 millimeters. On this extremity, both sides of the degrees for the space of 15 millimeters is graduated with $\frac{1}{2}$ millimeter degree to show clearly the common difference.

MEASURING APPARATUS OF CAPACITY FOR THE INSPECTION.

No. VI.

First Measuring Apparatus of Capacity. Is used for the inspection of the capacity of the measuring instruments of Japanese System.

Material.....Brass.

KINDS.—1 Shaku, 2 Shaku, 5 Shaku, 1 Gō, 2 Gō, 2 Gō 5 Shaku, 5 Gō, 1 Shō, 2 Shō, 5 Shō, and 1 To : 11 kinds in all.

No. VII.

Second Measuring Apparatus of Capacity. Is used for the inspection of the capacity of Metrical System.

Material.....Brass.

KINDS.—1 Centimeter, 2 Centimeter, 5 Centimeter, 1 Decimeter, 2 Decimeter, 5 Decimeter, 1 Litre, 2 Litre, 5 Litre, 10 Litre, and 20 Litre : 11 kinds in all.

No. VIII.

Scales used for measuring the measuring apparatus of capacity. Is used for the inspection of the length, depth, and width of the Capacity Measures.

Material.....Brass.

KINDS.—First Measuring length used for Capacity Measures.

Second Measuring length used for Capacity Measures.

Third Measuring length used for Capacity Measures.

GRADUATION.—On one surface of No. 1 and No. 2 Measures used for capacity measures is engraved the diameters of all the circular measuring apparatus of capacity of Japanese System and their common differences, while on other surface the common differences and the diameters of all capacity measures of metrical System are engraved. No. 3 Scale used for the inspection of capacity measures has on one of its surface the engraved diameters of all square capacity measures of Japanese System and common difference, while on the other it is carved with the Length, Breadth and Depth of “Togai” with their common differences.

WEIGHT MEASURES USED FOR THE INSPECTION.

No. IX,

First Weight.

Is used for the inspection of the weight of Japanese System, and for the inspection of the capacity of capacity measures by the weight of water.

MATERIAL.—Upwards of 2 kwamme, Iron; from minimum to 2 fun, Aluminium; and others, all Brass.

KINDS.— $\frac{1}{16}$ th of Mō, $\frac{1}{8}$ th of Mō, $\frac{1}{4}$ th of Mō, 1 Mō, 2 Mō, 5 Mō, 1 Rin, 2 Rin, 5 Rin, 1 Fun, 2 Fun, 5 Fun, 1 Momme, 2 Momme, 5 Momme, 10 Momme, 20 Momme, 50 Momme, 100 Momme, 200 Momme, 500 Momme, 1 Kwan, 2 Kwan and 5 Kwan : 24 kinds in all.

No. X.

Second Weight.

Is used for the inspection of the capacity of capacity Measures and the Weight of Material System by the Water Weight.

MATERIAL.—Upward of 2 Kilogramme, Iron; from minimum to 5 decigramme, Aluminium; and all others, Brass.

KINDS.—1 Milligramme, 2 Milligramme, 5 Milligramme, 1 Centigramme, 2 Centigramme, 5 Centigramme, 1 Decigramme, 2 Decigramme, 5 Decigramme, 1 Gramme, 2 Gramme, 5 Gramme, 10 Gramme, 20 Gramme, 50 Gramme, 100 Gramme,

200 Gramme, 500 Gramme, 1 Kilogramme, 2 Kilogramme, 5 Kilogramme, 10 Kilogramme and 20 Kilogramme ; 23 kinds in all.

No. XI.

Large-sized Beam-Balance, Maximum 10 kwan, Minimum 5 fun, is used for the inspection of the weight and for the inspection of the capacity of the capacity measures by the weight of water.

No. XII.

Medium-sized Beam-Balance, Maximum 1 Kwan, Minimum 1 Rin, is used for the inspection of the weight, and for the inspection of the capacity of the capacity measures by the weight of water.

No. XIII.

Small-sized Beam-Balance, Maximum 50 Momme, Minimum $\frac{1}{16}$ th of 1 Mō, and is used for the inspection of the weight.

WEIGHTS AND MEASURES.

(Department L. Group 151. Class 865.)

APPARATUS OF WEIGHT MEASURING.

Heretofore the balance and the weights employed in Analytical Chemistry was mostly imported from Europe and the United States, but the considerable progress of the industrial arts of the country at the later times left no room for the dissatisfaction towards the application of those made in the Empire. The proof of it can be seen by the articles to be exhibited on this occasion.

No.	NAME OF WEIGHTS OR MEASURES MANUFACTURED.	VALUE.	NAME OF MANUFACTURERS.
		yen.	
1	Balance.	50.000	Tokio, Sato Yoshisaburo.
2	"	40.000	" "
3	"	95.000	" Moriya Sadakichi.
4	Weight.	10.009	" Sato Yoshisaburo.
5	"	8.000	" "
6	"	12.000	" Moriya Sadakichi.
7	"	12.000	" "

WEIGHTS AND MEASURES.

(Department H. Group 112. Class 706 and 710).

As the precise measurement weight can not be perceived by the measurement of Japanese Scale used in the Empire of old, the employment of plat form Scale and the Letter Weight had became prevalent lately, with the corresponding improvement in the art of their manufacture. But the inconvenience of their transportation impeded them to supersede completely the use of Japanese Scale and the investigation on the latter weight seems to have the omen of success. No. 4—No. 9 should prove this, *Kujira Shaku* is used in measuring cloths.

WEIGHTS AND MEASURES. (Class 706).

No.	NAME OF WEIGHT.	VALUE.	NAME OF MANUFACTURER.
1	Plat form Scale.	yen. 9.000	Tokyo, Sato Yoshisaburō.
2	"	25.000	Osaka, Yamamoto Seinosuke.
3	"	12.000	" "
4	Japanese Scale.	1.900	" "
5	"	1.024	" "
6	"	1.875	" "
7	"	1.290	" "
8	"	0.790	" "
9	"	0.683	" "
10	Box Measures & Togai.	6.330	Tokyo, Shiotsuka Genzō.
11	Straight Measure.	0.400	" Nakamura Asakichi.
12	"	0.300	" "
13	"	0.500	" "
14	"	0.200	" "
15	"	0.080	" Nakamura Asakichi.
16	<i>Kujira Shaku</i> .	0.080	" "
17	"	0.030	" "
18	Fold Measure.	0.130	" "
19	"	0.090	" "
20	<i>Kujira Shaku</i> .	0.070	Osaka, Yoshimato Toku.
21	"	0.120	" "
22	"	0.050	(Kanagawa Prefecture. Suzuki Jiuichi.
23	"	0.120	"

(Class 710).

No.	NAME OF MEASURES.	VALUE.	NAME OF MANUFACTURER.
1	Letter Weights.	yen. 7.500	Tokyo, Sato Yoshisaburo.
2	"	4.500	" "
3	"	3.000	" "
4	"	10.000	" Moriya Sadakichi.

MEASURERS. (Class 710).

In the measure used in drawing the bamboo measure is preferable as there is no bending, expansion, or contraction like brass measure seconding the temperature.

No.	NAME OF SCALE MEASURES.	VALUE.	NAME OF MANUFACTURER
24	Straight Measure.	yen. 2.000	Tokyo, Nakamura Asakichi.
25	"	0.800	" "
26	"	0.300	" "
27	"	0.080	" "
28	"	2.400	" "
29	"	1.200	" "
30	"	0.500	" "
31	"	1.000	" "
32	"	0.500	" "
33	"	0.200	" "
34	"	0.050	" "
35	"	1.000	" "
36	"	0.500	" "
37	"	0.200	" "
38	"	0.050	" "
39	"	0.160	" "
40	"	0.140	" "
41	"	0.040	" "
42	"	0.140	" "
43	"	0.120	" "
44	"	0.010	" "
45	"	0.500	" "
46	"	0.160	" "
47	"	0.080	" "
48	"	0.500	" "

No.	NAME OF SCARE MEASURES.	VALUE.	NAME OF MANUFACTURERS.
49	Straight Measure.	yen. 0.200	Tokyo, Nakamura Asakichi.
50	"	0.080	" "
51	"	0.500	" "
52	"	0.200	" "
53	"	0.060	" "
54	"	1.600	" "
55	"	0.800	" "
56	"	0.400	" "
57	"	1.400	" "
58	"	0.400	" "
59	"	0.200	" "
60	"	1.400	" "
61	"	0.400	" "
62	"	0.200	" "
63	"	0.340	" "
64	"	0.100	" "
65	"	0.060	" "
66	"	0.800	" "
67	"	0.260	" "
68	"	0.240	" "
69	"	0.250	" "
70	"	0.100	" "
71	"	0.060	" "
72	"	1.000	" "
73	"	0.400	" "
74	"	0.160	" "
75	"	0.800	" "
76	"	0.300	" "
77	"	0.140	" "
78	"	0.200	" "
79	"	0.120	" "
80	"	0.160	" "
81	"	0.160	" "
82	"	0.170	" "
83	"	0.110	" "
84	"	1.800	" "
85	"	2.000	" "
86	"	1.200	" "
87	"	1.200	" "
88	"	0.090	{ Kanagawa Prefecture. Suzuki Jiuichi.
89	"	0.800	" "
90	"	0.700	" "
91	"	0.070	Osaka, Yoshimato Toku.
92	"	0.100	" "
93	"	0.080	" "
94	"	0.350	{ Kanagawa Prefecture. Suzuki Jiuichi.

Carpenter, Screen makers, Tub makers, joiners, etc., all use. The right angled measure. This measure is not only to measure the length, but, right-angled and inclinations calculated. It is not also used as rules.

No.	NAME OF MEASURES.	VALUE.	NAME OF MANUFACTURERS.
95	Right-angled Measure.	yen. 2.250	Tokyo, Nakamura Asakichi.
96	"	1.650	" "
97	"	1.500	" "
98	"	0.350	" "
99	"	0.350	" "
100	"	1.000	Osuka, Yoshimoto Toku.
101	"	0.850	" "
102	"	1.100	" "
103	"	0.950	" "
104	Plat form Scale.	15.000	" Yamamoto Seinosuke.





